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Valancy et al.

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(54) **RECYCLE INK TRAY**

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B41J 3/407 (2006.01)

(52) **U.S. Cl.**
CPC ***B41J 2/165*** (2013.01); ***B41J 3/4078*** (2013.01)

(58) **Field of Classification Search**
CPC B41J 2/165; B41J 3/4078
See application file for complete search history.

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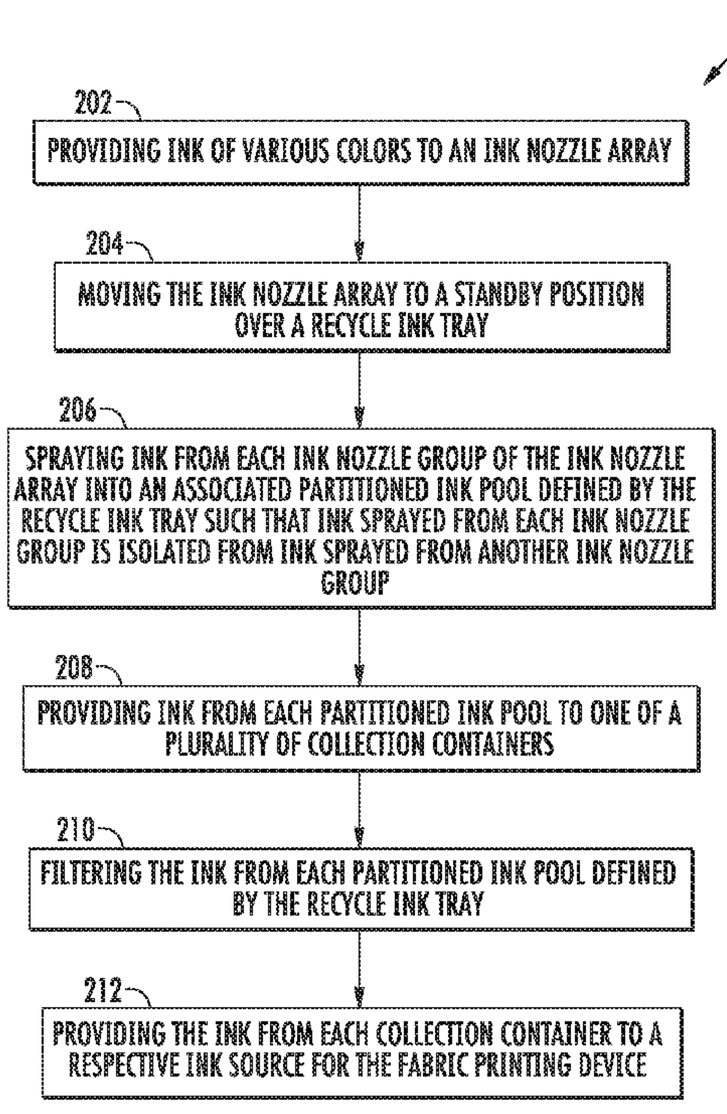
(57) **ABSTRACT**

A fabric printing device includes a printing surface for holding a fabric to be printed and an ink nozzle array movable between a print position and a standby position. The ink nozzle array is located over the printing surface when in the print position and includes a plurality of ink nozzle groups. Each ink nozzle group is configured to spray a different color ink than an adjacent ink nozzle group. The fabric printing device also includes a recycle ink tray defining a plurality of partitioned ink pools, each ink pool associated with one of the plurality of ink nozzle groups. The ink nozzle array is positioned over the recycle ink tray when in the standby position such that substantially all of the ink sprayed from a particular ink nozzle group is received in a respective partitioned ink pool and isolated from ink in an adjacent partitioned ink pool.

17 Claims, 5 Drawing Sheets



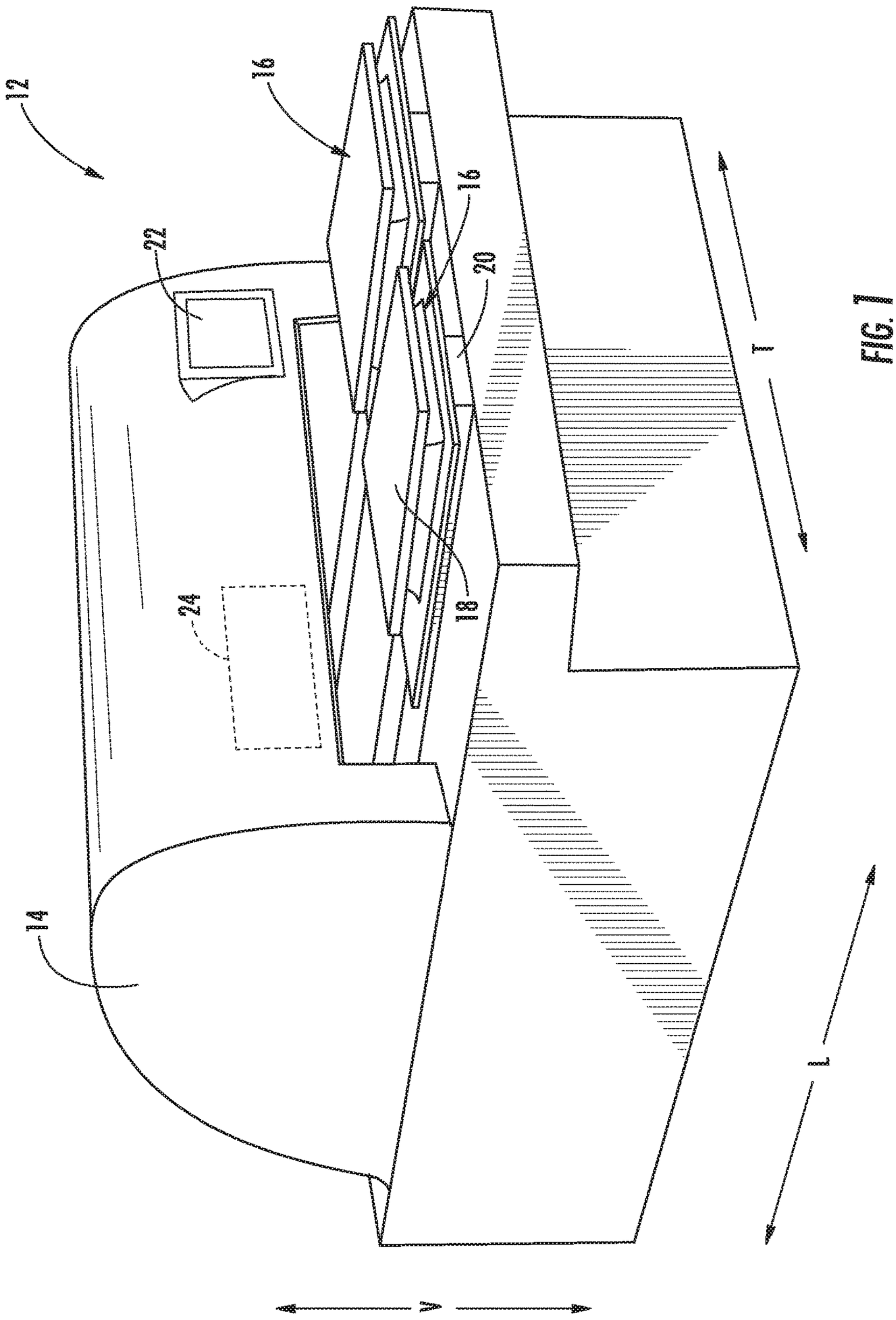


FIG. 1

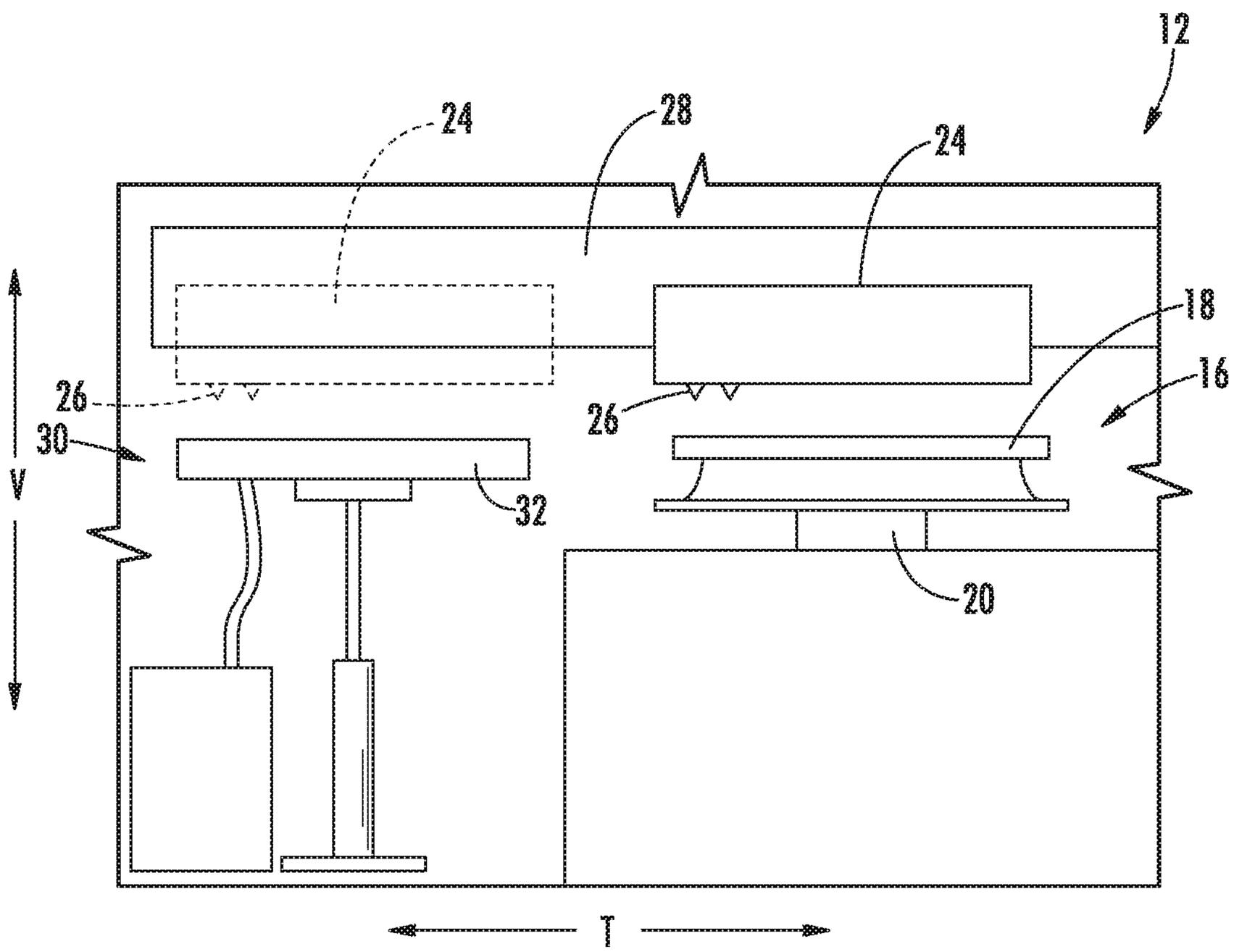


FIG. 2

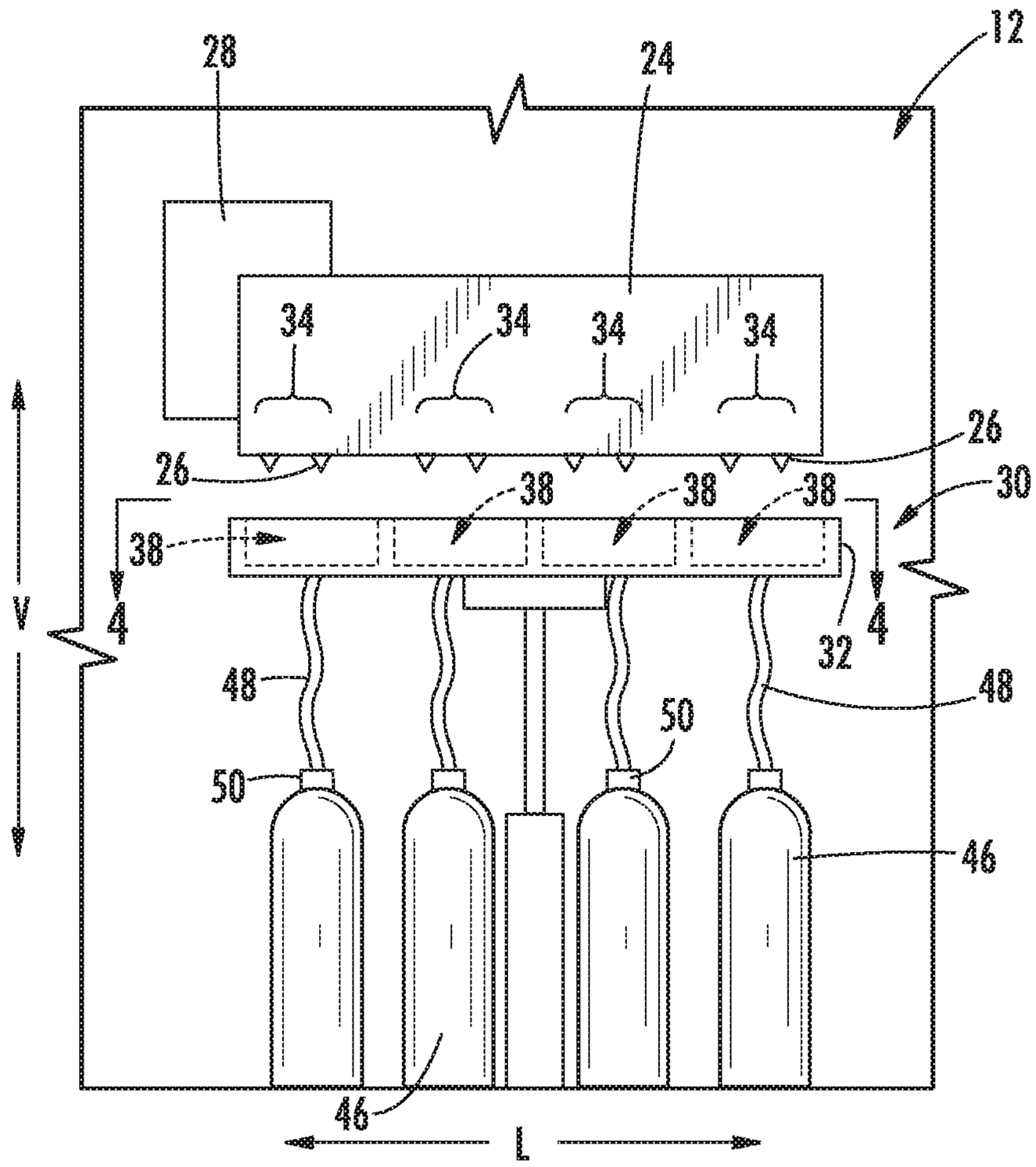


FIG. 3

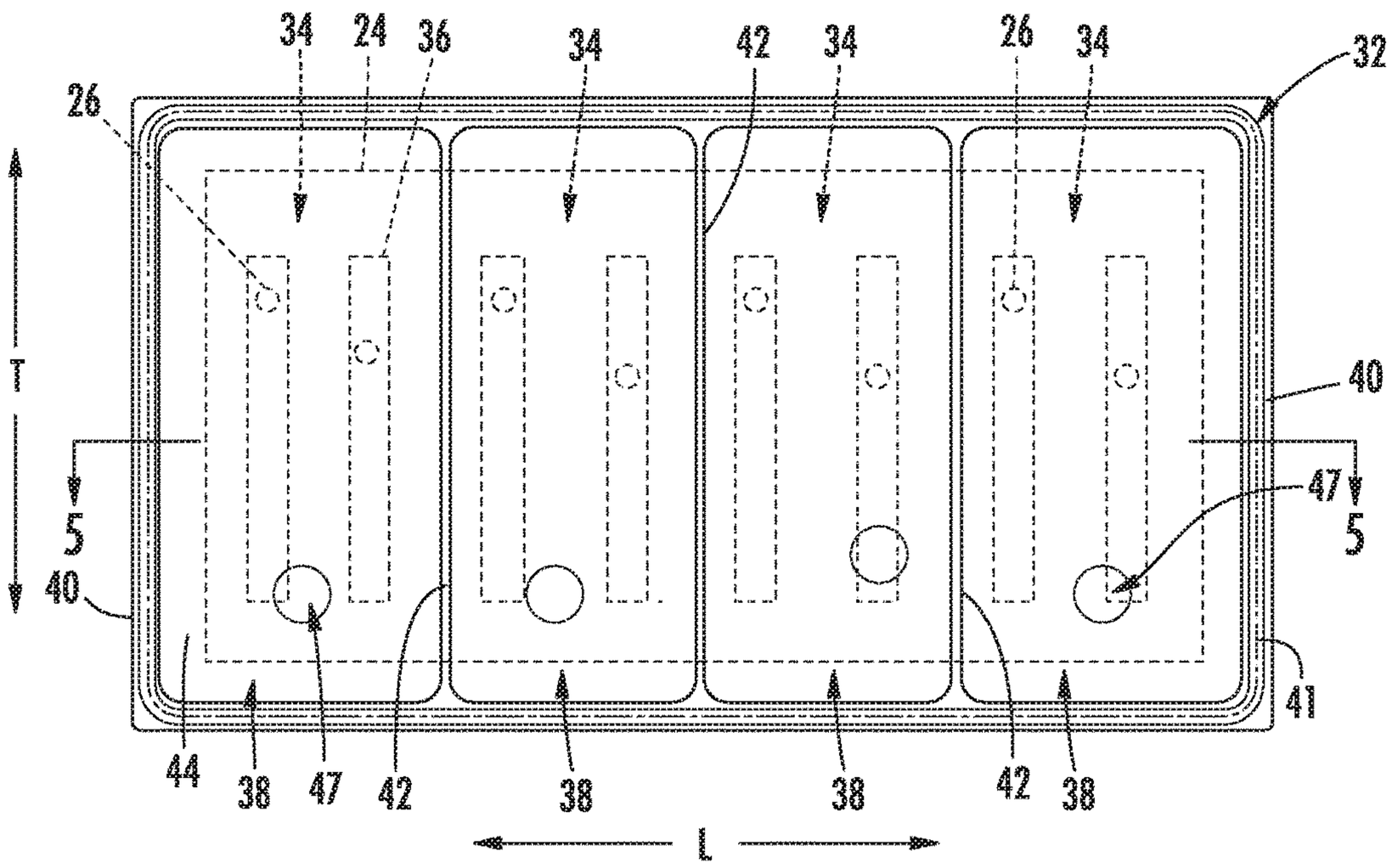

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FIG. 4

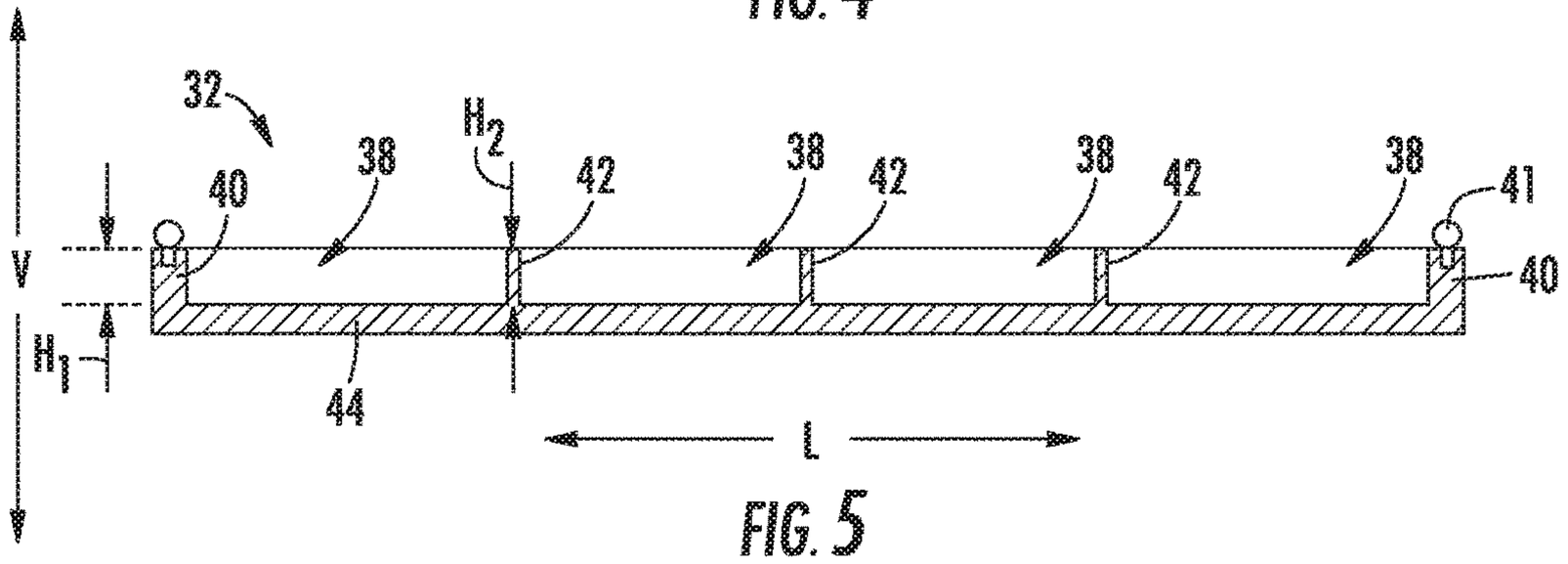
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FIG. 5

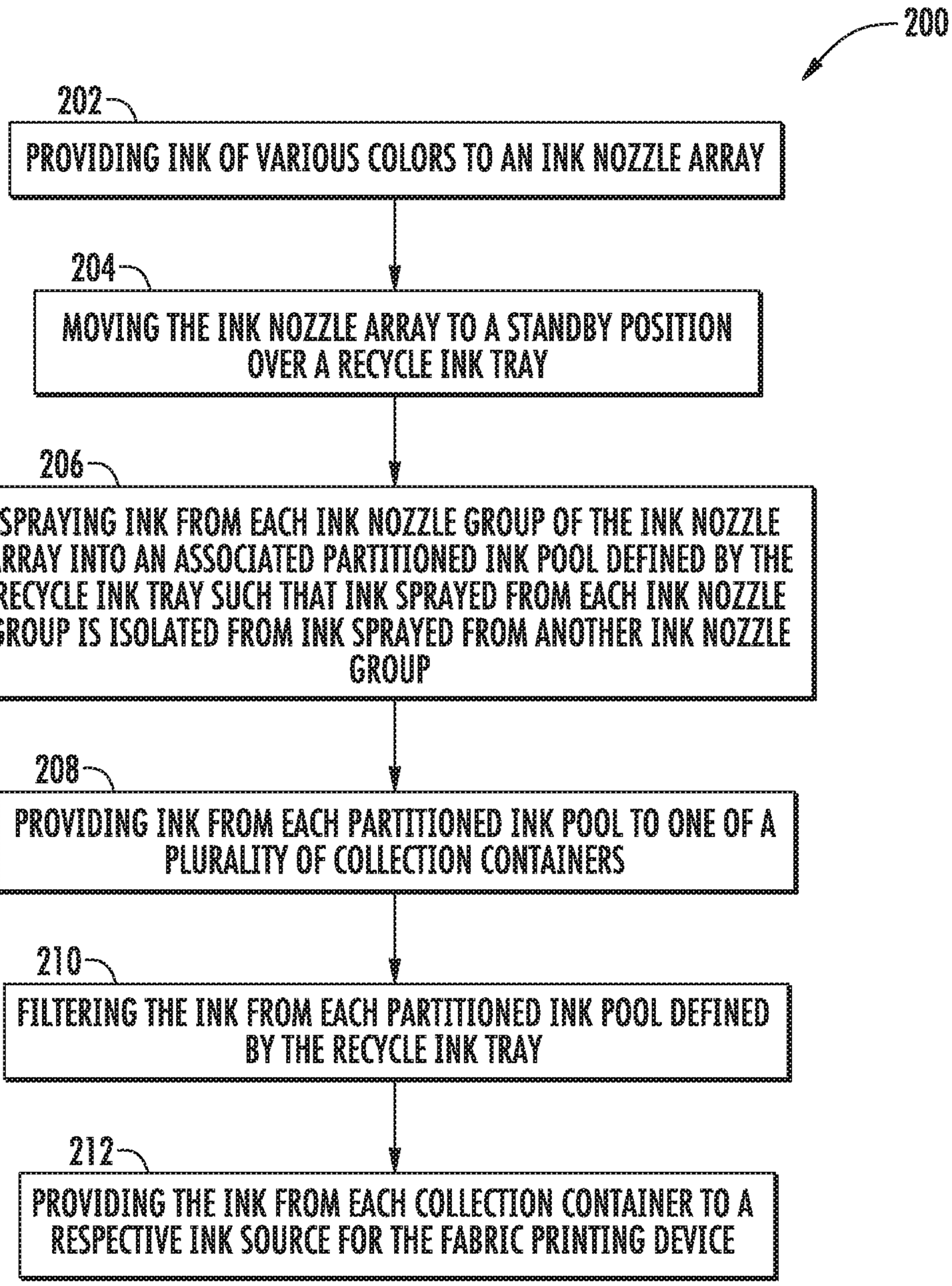
200
202
PROVIDING INK OF VARIOUS COLORS TO AN INK NOZZLE ARRAY
204
MOVING THE INK NOZZLE ARRAY TO A STANDBY POSITION OVER A RECYCLE INK TRAY
206
SPRAYING INK FROM EACH INK NOZZLE GROUP OF THE INK NOZZLE ARRAY INTO AN ASSOCIATED PARTITIONED INK POOL DEFINED BY THE RECYCLE INK TRAY SUCH THAT INK SPRAYED FROM EACH INK NOZZLE GROUP IS ISOLATED FROM INK SPRAYED FROM ANOTHER INK NOZZLE GROUP
208
PROVIDING INK FROM EACH PARTITIONED INK POOL TO ONE OF A PLURALITY OF COLLECTION CONTAINERS
210
FILTERING THE INK FROM EACH PARTITIONED INK POOL DEFINED BY THE RECYCLE INK TRAY
212
PROVIDING THE INK FROM EACH COLLECTION CONTAINER TO A RESPECTIVE INK SOURCE FOR THE FABRIC PRINTING DEVICE

FIG. 6

RECYCLE INK TRAY

FIELD OF THE INVENTION

The present invention relates generally to a recycle ink tray and a fabric printing device including the same.

BACKGROUND OF THE INVENTION

Printing designs and other objects on garments, such as T-shirts, sweatshirts, etc., may be accomplished using a direct to garment printing device. These direct to garment printing devices typically include a plurality of ink nozzles for printing the image onto the garment. Each of the ink nozzles may be configured to spray a single color of ink, the plurality of ink nozzles working together in concert to form the desired image on the garment.

With modern advances to garment printing devices, the plurality of ink nozzles may print relatively complex images on garments. Specifically, depending on the garment printing device, the nozzles may be relatively fine nozzles capable of spraying ink with a relatively high precision. As a consequence of the increased capability of these nozzles, the openings therein are relatively small. Accordingly, in order to ensure the nozzles do not clog up in between printing operations, or during other standby operations, garment printing devices may be configured to spray relatively small amounts of ink at certain intervals into a waste ink tray during such standby operations. Each of the plurality of nozzles sprays ink during the standby operations into the same waste ink tray. Such operations may prevent ink from drying and forming particles that may clog the nozzles.

However, operating garment printing devices in such manner may result in a relatively large amount of waste ink. Accordingly, a garment printing device capable of capturing the waste ink in a manner as to allow the waste ink to be recycled/reused would be useful.

BRIEF DESCRIPTION OF THE INVENTION

Aspects and advantages of the invention will be set forth in part in the following description, or may be obvious from the description, or may be learned through practice of the invention.

In one exemplary embodiment of the present disclosure, a fabric printing device is provided. The fabric printing device includes a printing surface for holding a fabric to be printed, and an ink nozzle array moveable between a print position and a standby position. The ink nozzle array is located over the printing surface when in the print position. The ink nozzle array includes a plurality of ink nozzle groups, each ink nozzle group configured to spray a different color ink than an adjacent ink nozzle group. The fabric printing device also includes a recycle ink tray defining a plurality of partitioned ink pools, each partitioned ink pool associated with one of the plurality of ink nozzle groups. The ink nozzle array is positioned over the recycle ink tray when in the standby position such that when the ink nozzle array is in the standby position, substantially all of the ink sprayed from a particular ink nozzle group is received in a respective partitioned ink pool and isolated from ink in an adjacent partitioned ink pool.

In another exemplary embodiment of the present disclosure, a recycle ink assembly for a fabric printing device is provided. The fabric printing device includes an ink nozzle array, the ink nozzle array including a plurality of nozzle groups. The recycle ink assembly includes a recycle ink tray

comprising a perimeter wall and a plurality of partition walls. The perimeter wall and the plurality of partition walls together define a plurality of partitioned ink pools. Each partitioned ink pool is configured to collect ink from an individual ink nozzle group and prevent ink collected from the ink nozzle group from mixing with ink collected from an adjacent ink nozzle group.

In an exemplary aspect of the present disclosure a method of operating a fabric printing device is provided. The method includes providing ink of various colors to an ink nozzle array, and moving the ink nozzle array to a standby position over a recycle ink tray. The recycle ink tray defines a plurality of partitioned ink pools, each partitioned ink pool associated with an ink nozzle group of the ink nozzle array. The method also includes spraying ink from each ink nozzle group into its associated partitioned ink pool defined by the recycle ink tray such that the ink sprayed from each ink nozzle group is isolated from ink sprayed from the other ink nozzle groups.

These and other features, aspects and advantages of the present invention will become better understood with reference to the following description and appended claims. The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

A full and enabling disclosure of the present invention, including the best mode thereof, directed to one of ordinary skill in the art, is set forth in the specification, which makes reference to the appended figures, in which:

FIG. **1** is a perspective view of a fabric printing device in accordance with an exemplary aspect of the present disclosure.

FIG. **2** is a front, schematic, cross-sectional view of a portion of the exemplary fabric printing device of FIG. **1**.

FIG. **3** is a side, schematic, cross-sectional view of the exemplary fabric printing device of FIG. **1**.

FIG. **4** is a top view of a recycle ink tray in accordance with an exemplary embodiment of the present disclosure for use in the exemplary fabric printing device of FIG. **1**.

FIG. **5** is a side, cross-sectional view of the exemplary recycle ink tray of FIG. **4**.

FIG. **6** is a flow diagram of a method of operating a fabric printing device in accordance with an exemplary aspect of the present disclosure.

DETAILED DESCRIPTION OF THE INVENTION

Reference will now be made in detail to present embodiments of the invention, one or more examples of which are illustrated in the accompanying drawings. The detailed description uses numerical and letter designations to refer to features in the drawings. Like or similar designations in the drawings and description have been used to refer to like or similar parts of the invention.

A fabric printing device is provided herein with a recycle ink tray capable of collecting ink sprayed during standby operations (e.g., to prevent clogging of one or more nozzles of the fabric printing device), while keeping inks of a different color separated. Specifically, a recycle ink tray in accordance with one or more of the embodiments described below may define a separate, partitioned ink pool for each color of ink sprayed by a plurality of nozzles of the fabric

printing device. The recycle ink tray may capture the ink, and provide such ink to separate storage containers. The captured ink may then be provided back to an ink source for the fabric printing device, such that the ink may be recycled.

Referring particularly to FIG. **1** a fabric printing device **12** in accordance with an exemplary embodiment of the present disclosure is depicted. It should be appreciated, that although a specific fabric printing device **12** is described below, in other exemplary embodiments, aspects of the present disclosure may additionally, or alternatively, be incorporated into any other suitable fabric printing device. The fabric printing device **12** defines a longitudinal direction L, a transverse direction T, and a vertical direction V, each orthogonal to one another. Additionally, the fabric printing device **12** generally includes a housing **14** and two printing slide assemblies **16**. Each printing slide assembly **16** includes a printing surface **18** for holding a fabric to be printed and a track system **20**. The track system **20** allows the printing surface **18** to move along the longitudinal direction L between a loading position (shown) and an interior position, i.e., a position within the housing **14** for printing. Although not depicted, the printing surface **18** may include clamps or other fasteners to hold the fabric in position during printing operations. In certain embodiments, the fabric printing device **12** may be configured to print images or other designs onto, e.g., T-shirts, sweatshirts, towels, or any other suitable fabrics.

The printing device also includes a user interface **22** through which a user may control the fabric printing device **12**. For example, the user may load an image to be printed through the user interface **22**, initiate printing operations, and control other parameters related to the fabric printing device **12**. The user interface **22** may also provide certain information about the fabric printing device **12** to the user. For example, the user interface **22** may provide information about ink levels, or any errors received during printing operations.

As will be explained in greater detail below, the fabric printing device **12** additionally includes an ink nozzle array **24** (depicted in phantom) for spraying a design onto a fabric. More particularly, the ink nozzle array **24** includes a plurality of ink nozzles **26** (see FIGS. below) configured to spray various colored inks onto the fabric held by the printing surface **18**. Accordingly, the ink nozzle array **24** may include, or alternatively may be in fluid communication with, an ink supply.

Referring now to FIG. **2**, a front, schematic, cross-sectional view of the exemplary fabric printing device **12** of FIG. **1** is depicted. The cross-sectional view of FIG. **2** is taken within the housing **14** of the fabric printing device **12**. For the embodiment depicted the printing surface **18** is in the interior position to allow for a fabric attached to thereto to be printed on.

As stated, the fabric printing device **12** includes the ink nozzle array **24**. The ink nozzle array **24** is movable between a print position (shown) and a standby position (depicted in phantom). More particularly, for the embodiment depicted, the ink nozzle array **24** is movable along the transverse direction T between the print position and the standby position. The exemplary fabric printing device **12** depicted includes a track **28** for moving the ink nozzle array **24** between the print position and the standby position. The track **28** may include one or more hydraulic and/or electric motors moving the ink nozzle array **24**. As will be shown more clearly below, the ink nozzle array **24** includes a plurality of ink nozzles **26** for spraying various colored inks onto the fabric during printing operations.

During printing operations, the ink nozzle array **24** is positioned over the printing surface **18** in the print position. By contrast, however, between printing operations, the ink nozzle array **24** is moved along the transverse direction T away from the printing surface **18** to the standby position. As will be appreciated, depending on a length of time at which the ink nozzle array **24** is in the standby position, the ink nozzles **26** may spray small amounts of ink (also referred to as "spitting"). Such may prevent ink in the nozzles from drying, and the dried particles of ink from clogging the ink nozzles **26** and/or being sprayed on a fabric, decreasing a print quality on the fabric. The exemplary fabric printing device **12** additionally includes a recycle ink assembly **30** including a recycle ink tray **32** to collect the ink sprayed from the plurality of ink nozzles **26** when in the standby position.

Referring now also to FIGS. **3** and **4**, additional views of the ink nozzle array **24** and recycle ink tray **32** are provided. Specifically, FIG. **3** provides a schematic view of the ink nozzle array **24** in the standby position, and FIG. **4** provides a top view of the recycle ink tray **32** taken along Line **4-4** in FIG. **3**, with the ink nozzle array **24** depicted in phantom for illustrative purposes.

As is depicted, the ink nozzle array **24** includes a plurality of ink nozzle groups **34**. Each ink nozzle group **34** is configured to spray a different color ink than an adjacent ink nozzle group **34**. In certain exemplary embodiments, the ink nozzle array **24** may include at least three ink nozzle groups **34**, at least four ink nozzle groups **34**, at least six ink nozzle groups **34**, or any other suitable number of ink nozzle groups **34**. Specifically, for the embodiment depicted, the ink nozzle array **24** includes four ink nozzle groups **34**. In certain embodiments, the four ink nozzle groups **34** may be configured as a black ink nozzle group **34** for spraying black ink, cyan ink nozzle group **34** for spraying cyan ink, a magenta ink nozzle group **34** for spraying magenta ink, and a yellow ink nozzle group **34** for spraying yellow ink. However, in other exemplary embodiments, the ink nozzle groups **34** may have any other suitable color combination.

Additionally, each ink nozzle group **34** for the embodiment depicted includes one or more ink nozzles **26** configured spray the same color ink. More particularly, for the embodiment depicted, each ink nozzle group **34** includes two ink nozzles **26**. However, in other embodiments, each ink nozzle group **34** may include any other suitable number of ink nozzles **26**. The ink nozzles **26** within each ink nozzle group **34** may slide along a track **36** in the transverse direction T during, e.g., printing operations.

As stated, when the ink nozzle array **24** is in the standby position, the ink nozzle array **24** is positioned over the recycle ink tray **32**. The recycle ink tray **32** defines a plurality of partitioned ink pools **38** configured to collect ink from an individual ink nozzle group **34**. Specifically, each partitioned ink pool **38** is associated with one of the plurality of ink nozzle groups **34**. For example, for the embodiment depicted, the recycle ink tray **32** defines four partitioned ink pools **38**, and each of the four partitioned ink pools **38** is associated with one of the four ink nozzle groups **34**, such that each ink nozzle group **34** of the ink nozzle array **24** is positioned directly above a respective partitioned ink pool **38** and is configured to spray ink into the respective partitioned ink pool **38** during standby operations. Notably, for the embodiment depicted, the printing surface **18** extends along the longitudinal direction L, the ink nozzle groups **34** are arranged along the longitudinal direction L, and the plurality of partitioned ink pools **38** are also arranged along the longitudinal direction L. However, in other embodi-

ments, the ink nozzle groups **34** and partitioned ink pools **38** may instead be arranged along any other direction.

Referring now also to FIG. **5**, providing a cross-sectional view of the recycle ink tray **32** along Line **5-5** in FIG. **4**, the exemplary recycle ink tray **32** depicted generally includes a perimeter wall **40**, a plurality of partition walls **42**, and a bottom wall **44**. Notably, for the embodiment depicted, a top side of the perimeter wall **40** includes a gasket **41** attached thereto for interfacing with the ink nozzle array **24**. The gasket **41** may be formed of any suitable elastomeric material. Additionally, the perimeter wall **40**, the plurality of partition walls **42**, and the bottom wall **44** define the plurality of partitioned ink pools **38**. For the embodiment depicted the perimeter wall **40** defines a height H1 along the vertical direction V relative to the bottom wall **44**, and similarly, each of the partition walls **42** also defines a height H2 along the vertical direction V relative to the bottom wall **44**. The height H2 of the partition walls **42** is substantially the same as the height H1 of the perimeter wall **40**. It should be appreciated, that as used herein, terms of approximation, such as "substantially," refer to being within a five percent (5%) margin of error.

With such a configuration, when ink is sprayed through the plurality of ink nozzles **26** of the various ink nozzle groups **34**, substantially all of the ink sprayed from a particular ink nozzle group **34** is received in a respective partitioned ink pool **38** and isolated from ink in an adjacent partitioned ink pool **38**. Specifically, each partitioned ink pool **38** may be configured to receive ink from an associated ink nozzle group **34** and prevent the received ink from mixing with ink received in an adjacent partitioned ink pool **38** from a different ink nozzle group **34**. Accordingly, such a configuration may keep ink of different colors from mixing with one another in the recycle ink tray **32**.

Notably, for the embodiment depicted, the recycle ink assembly **30** additionally includes a plurality of recycle ink storage containers **46**. Each recycle ink storage container **46** is fluidly connected to one of the partitioned ink pools **38** defined by the recycle ink tray **32**. More specifically, each recycle ink storage container **46** is fluidly connected with one of the partitioned ink pools **38** through a dedicated fluid line **48** attached to an opening **47** defined in the bottom wall **44** at the partitioned ink pool **38**. Accordingly, a partitioned ink pool **38** defined by the recycle ink tray **32** may collect ink from a respective ink nozzle group **34**, and provide such ink to a respective storage container **46** through a respective fluid line **48**.

For the embodiment depicted, the recycle ink assembly **30** additionally includes a filter for filtering particles out of ink flowing therethrough. The filter may be a micron sized filter. Specifically, the filter may be a forty micron or less filter, a thirty micron or less filter, a twenty micron or less filter, a fifteen micron or less filter, or any other suitable sized filter. Specifically, for the embodiment depicted, the recycle ink assembly **30** includes a plurality of filters **50**. Each filter **50** is arranged in-line with one of the dedicated fluid lines **48** for filtering particles out of ink flowing therethrough. More particularly, the recycle ink assembly **30** includes a plurality of filters **50** attached between the dedicated fluid lines **48** and the recycle ink storage containers **46**. The plurality of filters **50** may prevent any dried particles of ink from entering the recycle ink storage containers **46**.

A fabric printing device in accordance with one more embodiments of the present disclosure may allow for more efficient recycling of waste ink during operation of the fabric printing device. More particularly, a fabric printing device in accordance with one or more embodiments of the present disclosure may capture waste ink sprayed by the various ink nozzle groups in such a manner as to keep different color inks separate from one another such that the inks may be captured, stored, and reused. Such a configuration may result in more economical printing operations.

It should be appreciated, however, that in other exemplary embodiments, the fabric printing device **12** may have any other suitable configuration and the recycle ink assembly **30** may be configured in any other suitable manner. For example, in other embodiments, the partitioned ink pools **38** may have any other suitable shape and may be formed in any other suitable manner. Additionally, although the exemplary recycle ink assembly **30** includes filters **50** in-line with the dedicated fluid lines **48**, in other embodiments, the recycle ink assembly **30** may not include the filters, and instead the recycled ink may be filtered separately, prior to being reused.

Referring now to FIG. **6**, a flow diagram of a method (**200**) for operating a fabric printing device in accordance with an exemplary aspect of the present disclosure is provided. In certain exemplary aspects, the exemplary method (**200**) may be utilized with the exemplary fabric printing device **12** described above with reference to FIGS. **1** through **5**.

The exemplary method (**200**) includes at (**202**) providing ink of various colors to an ink nozzle array. The exemplary method (**200**) additionally includes at (**204**) moving the ink nozzle array to a standby position over a recycle ink tray. The recycle ink tray defines a plurality of partitioned ink pools, each partitioned ink pool associated with an ink nozzle group of the recycle ink tray. The exemplary method also includes at (**206**) spraying ink from each ink nozzle group into its associated partitioned ink pool defined by the recycle ink tray such that ink sprayed from each ink nozzle group is isolated from ink sprayed from the other ink nozzle groups.

The exemplary method (**200**) additionally includes at (**208**) providing ink from each partitioned ink pool to one of a plurality of collection containers. Each collection container is dedicated to one of the partitioned ink pools defined by the recycle ink tray. In certain exemplary aspects, providing at (**208**) ink from each partitioned ink pool to one of a plurality of collection containers may include providing such ink through a dedicated fluid line.

The exemplary method (**200**) additionally includes at (**210**) filtering the ink from each partitioned ink pool defined by the recycle ink tray. Filtering the ink from each partitioned ink pool defined by the recycle ink tray at (**210**) may include filtering the ink in-line with one or more dedicated fluid lines providing the ink from each partitioned ink pool to the respective collection containers. Additionally, the exemplary method (**200**) includes at (**212**) providing the ink from each collection container to a respective ink source for the fabric printing device.

It should be appreciated, however, that in other exemplary aspects, the exemplary method (**200**) may include any other suitable steps. For example in other exemplary aspects, filtering the ink from each partitioned ink pool at (**210**) may include filtering the ink after the ink has been collected in a respective collection container at (**208**) and before such ink is provided back to an ink source of the fabric printing device at (**212**).

This written description uses examples to disclose the invention, including the best mode, and also to enable any person skilled in the art to practice the invention, including making and using any devices or systems and performing any incorporated methods. The patentable scope of the invention is defined by the claims, and may include other

examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they include structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal languages of the claims.

What is claimed is:

1. A fabric printing device comprising:

a printing surface for holding a fabric to be printed;

an ink nozzle array moveable between a print position and a standby position, the ink nozzle array located over the printing surface when in the print position, the ink nozzle array comprising a plurality of ink nozzle groups, each ink nozzle group configured to spray a different color ink than an adjacent ink nozzle group;

a recycle ink tray defining a plurality of partitioned ink pools, each partitioned ink pool associated with one of the plurality of ink nozzle groups, the ink nozzle array positioned over the recycle ink tray when in the standby position such that when the ink nozzle array is in the standby position substantially all of the ink sprayed from a particular ink nozzle group is received in a respective partitioned ink pool and isolated from ink in an adjacent partitioned ink pool;

a plurality of recycle ink storage containers, wherein each recycle ink storage container is fluidly connected to one of the partitioned ink pools defined by the recycle ink tray through a dedicated fluid line; and

a plurality of filters, each filter arranged in-line with one of the dedicated fluid lines for filtering particles out of ink flowing therethrough.

2. The fabric printing device of claim **1**, wherein when the nozzle array is in the standby position each ink nozzle group of the ink nozzle array is positioned directly above a respective partitioned ink pool and is configured to spray ink into the respective partitioned ink pool.

3. The fabric printing device of claim **1**, wherein the printing surface extends along a longitudinal direction, wherein the nozzle groups are arranged along the longitudinal direction, and wherein the plurality of partitioned ink pools are also arranged along the longitudinal direction.

4. The fabric printing device of claim **1**, wherein the recycle ink tray comprises an outer perimeter wall and a plurality of partition walls defining the plurality of partitioned ink pools.

5. The fabric printing device of claim **4**, wherein the recycle ink tray further comprises a bottom wall, wherein the outer perimeter wall defines a height relative to the bottom wall, wherein the plurality of partition walls define a height relative to the bottom wall, and wherein the height of the outer perimeter wall is substantially the same as the height of the plurality of partition walls.

6. The fabric printing device of claim **1**, wherein the plurality of ink nozzle groups includes at least four ink nozzle groups, and wherein the recycle ink tray defines at least four partitioned ink pools.

7. The fabric printing device of claim **1**, wherein each nozzle group comprises two or more nozzles, each configured to spray a same colored ink.

8. The fabric printing device of claim **1**, wherein each of the plurality of filters is a forty micron or less filter.

9. The fabric printing device of claim **1**, wherein each of the plurality of filters is a fifteen micron or less filter.

10. The fabric printing device of claim **1**, wherein the recycle ink tray comprises an outer perimeter wall and a gasket attached to a top side of the outer perimeter wall for interfacing with the ink nozzle array.

11. The fabric printing device of claim **1**, wherein each of the plurality of filters is positioned proximate a respective recycle ink storage container.

12. The fabric printing device of claim **11**, wherein each of the plurality of filters is positioned at a downstream end of the respective dedicated fluid line.

13. A recycle ink assembly for a fabric printing device, the fabric printing device comprising an ink nozzle array, the ink nozzle array comprising a plurality of nozzle groups, the recycle ink assembly comprising:

a recycle ink tray comprising a perimeter wall and a plurality of partition walls, the perimeter wall and the plurality of partition walls together defining a plurality of partitioned ink pools, each partitioned ink pool configured to collect ink from an individual ink nozzle group and prevent ink collected from the ink nozzle group from mixing with ink collected from an adjacent ink nozzle group;

a plurality of recycle ink storage containers, wherein each recycle ink storage container is fluidly connected to one of the partitioned ink pools defined by the recycle ink tray through a dedicated fluid line; and

a plurality of filters, each filter arranged in-line with one of the dedicated fluid lines for filtering particles out of ink flowing therethrough.

14. The recycle ink assembly of claim **13**, wherein the recycle ink tray further comprises a bottom wall, wherein the outer perimeter wall defines a height relative to the bottom wall, wherein the plurality of partition walls define a height relative to the bottom wall, and wherein the height of the outer perimeter wall is substantially the same as the height of the plurality of partition walls.

15. The recycle ink assembly of claim **13**, wherein the recycle ink tray defines at least four partitioned ink pools.

16. A method of operating a fabric printing device comprising:

providing ink of various colors to an ink nozzle array;

moving the ink nozzle array to a standby position over a recycle ink tray, the recycle ink tray defining a plurality of partitioned ink pools, each partitioned ink pool associated with an ink nozzle group of the ink nozzle array;

spraying ink from each ink nozzle group into its associated partitioned ink pool defined by the recycle ink tray such that the ink sprayed from each ink nozzle group is isolated from ink sprayed from the other ink nozzle groups;

providing ink from each partitioned ink pool to one of a plurality of collection containers, each collection container dedicated to one of the partitioned ink pools defined by the recycle ink tray; and

providing ink collected in each of the collection containers to an ink source of the fabric printing device.

17. The method of claim **16**, further comprising:

filtering the ink from each partitioned ink pool defined by the recycle ink tray.

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